

**ABSTRACT OF THE INVENTION**

A layered article of manufacture and a method of manufacturing same is disclosed. A substrate has a biaxially textured MgO crystalline layer having the c-axes thereof inclined with respect to the plane of the substrate deposited thereon. A layer of one or more of YSZ or  $Y_2O_3$  and then a layer of  $CeO_2$  is deposited on the MgO. A crystalline superconductor layer with the c-axes thereof normal to the plane of the substrate is deposited on the  $CeO_2$  layer. Deposition of the MgO layer on the substrate is by the inclined substrate deposition method developed at Argonne National Laboratory. Preferably, the MgO has the c-axes thereof inclined with respect to the normal to the substrate in the range of from about  $10^\circ$  to about  $40^\circ$  and YBCO superconductors are used.